

USSR

TUMANOV, V. I., et al, Neorganicheskiye Materialy, Vol 6, No 1, Jan 70, pp 15-19

Investigation of the theoretical relationship between the coercive force and volumetric content (to the $2/3$ power) of nonmagnetic inclusions (the carbide component) also demonstrated the presence of an inflection point for a concentration of the binding phase of 6 and 11 volumetric percent, respectively, for two-phase and three-phase alloys. Alloys with a high Co content (more than 6 volumetric percent in two-phase alloys and more than 12 volumetric percent in three-phase alloys) have structures in the form of a cobalt matrix with included isolated carbide grains. In alloys with a lower Co content the binding phase has a continuous structure -- individual sections of the cobalt solid solution are isolated by the carbide phase. Graphs are presented illustrating these various relations.

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1/2 042

UNCLASSIFIED

PROCESSING DATE--18SEP70

TITLE--EFFECT OF TEMPERATURE ON THE PHYSICAL PROPERTIES OF TWO AND THREE PHASE TITANIUM AND TUNGSTEN SOLID ALLOYS -U-

AUTHOR--(03)-TUMANOV, V.I., MOZZHUKHIN, YE.I., YELMANOVA, S.M.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(1), 15-19

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--TITANIUM ALLOY, TUNGSTEN ALLOY, COBALT CONTAINING ALLOY, CARBIDE, THERMAL EFFECT, PHYSICAL PROPERTY, ELASTIC MODULUS, NONMETALLIC INCLUSION, ELECTRIC RESISTIVITY, MAGNETIC COERCIVE FORCE, TERNARY ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAHE--1984/0152

STEP NO--UR/0363/70/006/001/0015/0019

CIRC ACCESSION NO--AP0054948

UNCLASSIFIED

2/2 042

CIRC ACCESSION NO--A00054948

UNCLASSIFIED

PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TEMP. DEPENDENCE OF THERMAL EXPANSION, ELEC. RESISTIVITY, AND ELASTICITY MODULUS OF 2 AND 3 PHASE Ti W SOLID ALLOYS IN THE TEMP. RANGE 20-800DEGREES WAS INVESTIGATED. THE CHANGE IN THE PHYS. PROPERTIES AS DEPENDENT ON THE CO CONTENT DOES NOT TURN OUT TO BE ADDITIVE. THE COMPN. PROPERTY CURVES HAVE EXTREME VALUES, WHICH CORRESPOND TO 6 VOL. PERCENT CO FOR ALLOYS OF THE 2 PHASE COMPN. AND TO EQUIVALENT TO 12 VOL. PERCENT CO FOR 3 PHASE ALLOYS. EXAMN. OF THE THEORETICAL DEPENDENCE BETWEEN THE COERCIVE FORCE AND THE TWO THIRDS POWER OF THE VOL. CONTENT OF NONMAGNETIC INCLUSIONS (CARBIDE COMPONENT) ALSO SHOWED THE PRESENCE OF AN INFLECTION AT THE CONC. OF THE BINDING PHASE OF 6 AND 11 VOL. PERCENT, RESP., FOR THE 2 AND THE 3 PHASE ALLOYS. ALLOYS WITH A HIGH CO CONTENT (GREATER THAN 6 VOL. PERCENT IN 2 PHASE ALLOYS AND GREATER THAN 12 VOL. PERCENT IN 3 PHASE ALLOYS) HAVE A STRUCTURE IN THE FORM OF A CO MATRIX CONTG. INCLUSIONS IN THE FORM OF ISOLATED CARBIDE GRAINS.

UNCLASSIFIED

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UDC 615.214.31.015.4:612.823.5

POPOVA, E. N., VAVILOV, A. M., KRIVITSKAYA, G. N., and TUMANOV, V. P., Brain Institute and Institute of Surgery imeni A.V.Vishnevskiy, Academy of Medical Sciences USSR, Moscow

"Effect of Amphetamine Sulfate on the Structure of Interneuronal Connections"

Moscow, Zhurnal Nevropatologii i Psikhiiatrii, No 3, 1973, pp 382-387

Abstract: Intraperitoneal injection of rats with 1 mg/kg of amphetamine sulfate had little effect on the dendrites of most neurons in the caudate nucleus or cerebral cortex. Following a dose of 2.5 mg/kg, a dense network of fibrils of different sizes was seen in slices from the caudate nucleus stained with silver by Golgi's method. Along the thinnest fibrils could be seen varicosities of irregular shape and size that stained more intensely with silver. The number of spines per unit of dendrite length increased markedly. In this axonal network were intertwined thicker fibers branching out in arboreal fashion. The cortex also exhibited an axonal network, denser in the lower layers. Injection of 10 mg/kg of amphetamine sulfate intensified the staining of the fibrillar structures. The number of spines on the dendrites was somewhat larger than when the moderate dose was used and there were more axodendritic contracts on the trunk and spines. Thus, the number of spines per unit of 1/2

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POPOVA, E. N., et al., Zhurnal Nevropatologii i Psikhatrii, No 3, 1973,
pp 382-387

dendrite length regularly increased as the dose of amphetamine sulfate was
boosted, showing that both the caudate nucleus and the sensorimotor cortex
were stimulated by the drug.

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USSR

UDC: 539.143.43

TUJANOV, V. S.

"Structure of Nuclear Magnetic Resonance Spectra of the $A_i B_k$ Class"
Moscow, Vestnik Moskovskogo Universiteta--Fizika, Astronomiya,
vol 13, No 3, 1972, pp 271-277

Abstract: The author finds that it is desirable to study the structural qualities of the resonance magnetic spectra for whole classes of the spectra rather than for individual forms. Hence, this paper investigates the spectra of the $A_i B_k$ type, where i and k are arbitrary. The author defines the structure of a spectrum as the characteristics of a given kind of spectrum regardless of the numerical values of the constants distinguishing it. It is shown how spectra can be conveniently analyzed by using energy level systems, and the diagrams of the energy levels are shown for the total spins characterizing the state of the $A_i B_k$ system. It is shown also that the following must be studied in the theory of spectrum structure: the rule for repeated frequency intervals, the connection between combination and noncombination lines, the relationships among the frequencies as the consequence of invariance of the Hamiltonian matrix spur, and the identities connecting the intensities of the given frequency groups. The author thanks Yu. S. Konstantinov for his comments.

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1/2 016

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--EFFECT OF THE TYPE OF ADHESIVE AND THE MODIFICATION OF RUBBERS ON THE BONDING STRENGTH OF RUBBER CORD SYSTEMS --U-

AUTHOR--(05)--DOSTYAN, M.S., UZINA, R.V., SHVARTS, A.G., TUMANEVA, A.I., FROLIKOVA, V.G.

COUNTRY OF INFO--USSR

SOURCE--KAUCH. REZINA 1970, 29(2), 29031

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ADHESIVE, BONDING STRENGTH, METHACRYLIC ACID, RESORCINOL, FORMALDEHYDE, CARBOXYLATE RUBBER, PYRIDINE, LATEX, CORGAGE, MOTOR VEHICLE TIRE, STATISTIC ANALYSIS/(U)FR12 RESORCINOL FORMALDEHYDE, (U)SKD1 CARBOXYLATE RUBBER, (U)DSVP15 VINYL PYRIDINE LATEX

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0388

STEP NO--UR/0138/70/029/002/0029/0031

CIRC ACCESSION NO--AP0113306

UNCLASSIFIED

2/2 016

CIRC ACCESSION NO--AP0113306

UNCLASSIFIED

PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPUTER ASSISTED STATISTICAL
 ANAL. OF A SET OF PLANNED EXPTS. GAVE THE OPTIMUM AMTS. OF MODIFIER
 RU-1, METHACRYLIC ACID (I), AND FR-12 (RESURCINOL HCHO RESIN) IN
 CARBOXYLIC LATEX SKD-1 AND LATEX DSVP-15 CONTG. VINYL PYRIDINE GROUP.
 THE OPTIMUM FILLER AMTS. GIVE THE HIGHEST BONDING STRENGTH BETWEEN THESE
 LATEXES (WHEN CURED) AND THE TIRE CARCASS CORDS. THE RESULTS ARE
 PRESENTED IN THE FORM OF THE REGRESSION EQUATIONS AND GRAPHS.
 FACILITY: NAUCH.-ISSLED. INST. SHINNOI PROM., MOSCOW, USSR.

UNCLASSIFIED

1/2 007
 UNCLASSIFIED
 TITLE—REACTIONS OF PERFLUORO ACID HYDRAZIDES. II. REACTION OF PERFLUORO
 ACID HYDRAZIDES WITH CHLORINE -U-
 AUTHDR—(04)—SIDOROVA, L.P., TUMANOVA, A.V., GRINBLAT, M.P., LOPYREV, V.A.
 COUNTRY OF INFO—USSR
 SOURCE—Zh. ORG. KHIM. 1970, 6(4), 705-6
 DATE PUBLISHED—70
 SUBJECT AREAS—CHEMISTRY
 TOPIC TAGS—CARBOXYLIC ACID CHLORIDE, FLUORIDE, AZIDE
 CENTRGL MARKING—NO RESTRICTIONS
 DOCUMENT CLASS—UNCLASSIFIED
 PROXY REEL/FAME—2000/2155
 GIRC ACCESSION NO—AP0125738
 STEP NO—UR/0366/70/006/004/0705/0706
 UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--300CT70

CIRC ACCESSION NO--AP0125738

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PASSAGE OF DRY CL THROUGH CF
SUB3 CONHNH SUB2 IN MENO SUB2 GAVE CF SUB3 COCL, HCL, AND N. SIMILARLY,
CF SUB3 CF SUB2 CONHNH SUB2, CF SUB3 CF SUB2 CF SUB2 CONHNH SUB2, AND H
SUB2 NNHOC(CF SUB2) SUB3 CONHNH SUB2 REACTED TO GIVE THE CORRESPONDING
ACID CHLORIDES. FACILITY: LENINGRAD. TEKHNOL. INST.
TSELLYUL.-BUM. PROM., LENINGRAD, USSR.

UNCLASSIFIED

172 024

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--REASONS FOR THE INFLUENCE OF LOW TEMPERATURE TEMPERING ON THE
STRESS RUPTURE STRENGTH OF ALLOYS BASED ON NICKEL AND CHROMIUM -U-
AUTHOR-(03)-BELYATSKAYA, I.S., RYBALOV, R.G., TUMANOVA, N.G.

COUNTRY OF INFO--USSR

SOURCE--FIZ. METAL. METALLOVED. 1970, 29(1) 186-8

DATE PUBLISHED--70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CHROMIUM ALLOY, ALLOY DESIGNATION, NICHROME ALLOY, METAL CREEP
RUPTURE STRENGTH, ELECTRON MICROSCOP, RESISTIVITY, NICKEL BASE
ALLOY/(U)E1437 NICKEL BASE ALLOY, (U)E1617 NICKEL BASE ALLOY, (U)E1698
NICKEL BASE ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1988/0697

STEP NO--UR/0126/70/029/001/0186/0188

CIRC ACCESSION NO--AP0105673

UNCLASSIFIED

2/2 024

CIRC ACCESSION NO--A0105673

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NEW DATA WERE OBTAINED ON ALLOY E1698 (WHICH DIFFERS IN COMPN. FROM ALLOY E1617), THEREBY CONFIRMING THE INCREASE OF LONG TERM STRENGTH AS A RESULT OF LOW TEMP. TEMPERING IN ADDN. TO CONVENTIONAL HEAT TREATMENT. BASED ON ELECTRON MICROSCOPIC STUDIES, THE EFFECT OF THE LOW TEMP TREATMENT IS NOT ASSOCD. WITH THE ADDNL. PPTN. OF THE STRENGTHENING PHASE. AFTER TEMPERING AT 775DEGREES THE SP. ELEC. RESISTIVITY OF THE ALLOY E1698 DECREASES AS COMPARED TO THE QUENCHED STATE; AFTER LOW TEMP. TEMPERING IT INCREASES, AND DOES NOT GO ON DECREASING, AS ONE WOULD EXPECT TO HAPPEN UPON ADDNL. PPTN. OF THE GAMMA PRIME PHASE. THE INCREASE IN ELEC. RESISTIVITY IS APPARENTLY CAUSED BY THE SAME PROCESSES WHICH ALSO TAKE PLACE IN NICHROME, AND ALLOYS E1437 AND E1617. AN EXPLANATION IS OFFERED FOR THE ROLD OF LOW TEMP. TEMPERING: DURING LOW TEMP. TEMPERING THERE PROCEEDS THE FORMATION OF ORDERED REGIONS IN THE MATRIX SOLID SOLN., AND THE CRIT. TEMP. OF THE ORDERING LIES SOMEWHAT HIGHER THAN THE OPERATING TEMP. AT THE OPERATING TEMP. THE FORMATION OF ORDERED REGIONS FOR ALL PRACTICAL PURPOSES DOES NOT TAKE PLACE IN THE QUENCHED ALLOY. THESE FORM DURING THE LOW TEMP. TEMPERING AT A NOTICEABLE RATE, AND ARE THEN PRESERVED WITH INCREASED TEMP. TO THE OPERATING TEMPS.

UNCLASSIFIED

1/2 018
UNCLASSIFIED
PROCESSING DATE--30OCT70
TITLE--USE OF VECTOR POLAROGRAPHY FOR STUDYING FUSED SALTS -U-
AUTHOR--(03)-DELIMARSKIY, YU.K., TUMANOVA, N.KH., PRIKHODKO, M.U.
COUNTRY OF INFO--USSR
SOURCE--ELEKTROKIMIYA 1970, 6(4), 556-61
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--FUSED SALT, POLAROGRAPHIC ANALYSIS, PLATINUM ELECTRODE,
LITHIUM CHLORIDE, POTASSIUM CHLORIDE, CADMIUM CHLORIDE, ACTIVATION
ENERGY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/1125
CIRC ACCESSION NO--AP0121684
STEP NO--UR/0364/70/006/004/0056/0561
UNCLASSIFIED

012 018

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121684
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REDN. OF CDCL SUB2 (SMALLER
 THAN OR EQUAL TO 0.3 WT.PERCENT) AT A 0.5 MM DIAM. PT WIRE ELECTRODE AT
 500DEGREES IN THE 1:1 KCL:LICL MOLTEN SALT WAS STUDIED BY VECTOR
 POLAROGRAPHY. THE CONC. EFFECT ON PEAK HEIGHT WAS LINEAR FOR CONCNS.
 FROM 10 NEGATIVE PRIME3 TO 0.4 WT.PERCENT; HENCE, VECTOR POLAROGRAPHY
 CAN BE USED TO DET. CD PRIME2 POSITIVE IN KCL-LICL. THE TEMP. COEFF.
 FOR THE PEAK HEIGHT (FROM 500-600DEGREES) WAS 2PERCENT AND THE
 ACTIVATION ENERGY 12.7 KCAL-MOLE.
 KHIM., KIEV, USSR. FACILITY: INST. OBSHCH. NEORG.

UNCLASSIFIED

1/2 016

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--PRODUCTS OF THE ELECTROLYTIC DECOMPOSITION OF FUSED CARBONATES -U-

AUTHOR--(04)-DELIMARSKIY, YU.K., GRISHCHENKO, V.F., TUMANOVA, N.KH.,
SHAPOVAL, V.I.

COUNTRY OF INFO--USSR

SOURCE--UKR. KHIM. ZN. 1970, 36(2), 136-41

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTROLYSIS, CARBONATE, FUSED SALT, ALKALI METAL, EUTECTIC,
CHEMICAL DECOMPOSITION, ELECTROLYTIC DECOMPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1932

STEP NO--UR/0073/70/036/002/0136/0141

CIRC ACCESSION NO--AP0118894

UNCLASSIFIED

2/2 016

CIRC ACCESSION NO--AP0118894
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT. NO C IS FORMED AT THE CATHODE IF AN ELECTROLYTE CONTG. 50PERCENT EQUIMOLAR K SUB2 CO SUB3-NA SUB2 CO SUB3 MIXT. IN KCL IS USED AT 700DEGREES. IF TO THE SOLN., 9 PERCENT LI SUB2 CO SUB3 IS ADDED THE CURRENT EFFICIENCY OF C BECOMES 92.8PERCENT AND IN LI SUB2 CO SUB3-K SUB2 CO SUB3 EUTETIC AT A C.D. OF 1 A-CM PRIME2, THE EFFICIENCY OF C IS 100PERCENT AT 450DEGREES, FALLING WITH TEMP. AND C.D. INCREASE DUE TO FORMATION OF ALKALI METAL. ADDN. OF CO SUB2 TO THE SOLN. HAS LITTLE EFFECT ON C FORMATION. ADDN. OF 3PERCENT KOH MARKEDLY REDUCES IT. THERE IS A DECREASE IN C EFFICIENCY WITH ADDN. OF 25-50PERCENT KF. THE FORMATION OF C IS ATTRIBUTED TO THE PRESENCE OF CO SUB2 IN THE ELECTROLYTE AND THE EFFECT OF LI SUB2 CO SUB3 ON THE EASE OF ITS DECOMP. NO FORMATION OF CO WAS OBSERVED. AT THE ANODE, CO SUB2-O SUB2 MIXTS. ARE FORMED; THE MAX. CO SUB2 :O SUB2 RATIO WAS OBTAINED AT 840DEGREES IN K SUB2 CO SUB3-NA SUB2 CO SUB3 MIXT. (2.35:1.0). IN LI SUB2 CO SUB3-K SUB2 CO SUB3 AT 600DEGREES, THE RATIO WAS 1.0:1.17. THIS IS BELIEVED TO BE LARGELY DUE TO THE INCREASED EASE OF DISCHARGE OF CO SUB3 PRIME2 NEGATIVE AT THE HIGHER TEMP. FACILITY: INST. ORSHCH. NEORG. KHIM., KIEV, USSR.

UNCLASSIFIED

USSR

UDC 621.438.002.51

TUMANOVSKIY, A. G., Candidate of Technical Sciences, All-Union
Institute of Heat Engineering imeni F. E. Dzerzhinskiy
"Some Ways of Lowering the Concentration of Nitrogen Oxides in
Combustion Chambers of Gas Turbine Engines"

Moscow, Teploenergetika, No 6, Jun 73, pp 30-33

Abstract: On the basis of investigation results of the effect of design characteristics and operation factors on the formation of nitrogen oxide in the combustion chamber of gas turbine engines, a formula for determining the nitrogen oxide concentration in the combustion chamber was derived. The formula is based on a functional dependence formulated by Ya. B. Zel'dovich with consideration for the physico-chemical nature of the process. A modernization of the burner system resulted in considerably decreased NO formation: despite the high compression, the NO concentration behind the combustion chamber did not exceed 0.0065-0.007%. The NO formation at the exhaust when burning liquid fuel of various brands, the lowering of No content when burning natural gas, and the influence of water sprayed into the combustion zone on the

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TUMANOVSKIY, A. G., Teploenergetika, No 6, Jun 73, pp 30-33

NO content in flue gases behind the combustion chamber are discussed by reference to diagrams. Means are indicated guaranteeing a decrease of NO content in combustion products. Three figures, two formulas, one table, six bibliographic references.

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USSR

UDC 538.577.51

VINICHENKO, YU.P., ZAKHAR'YEV, L.N., LEMANSKIY, A.A., TUMANSKAYA, A. YE.
"Diffraction Of A Plane Wave At The Grating Of Plane Waveguides With Protruding Dielectric Plates"

Radiotekhnika i elektronika, Vol XVII, No 7, July 1972, pp 1382-1386

Abstract: In order to evaluate the efficiency of using dielectric radiators for matching waveguide-type gratings with space, the problem is considered of diffraction of a plane wave at an endless grating of plane waveguides filled with dielectric plates which protrude some distance from the waveguide. It is assumed that the waveguides have perfect conductivity and their thickness is arbitrary. This problem reduces to the solution of an infinite system of algebraic equations concerned with the amplitudes of the partial waves in space under the grating in the region which is occupied by the protruding parts of the plates and within the waveguides. The results are presented of numerical calculations which show that the dielectric radiators make it possible substantially to decrease the mismatch of a waveguide-type grating with space. 4 fig. 2 ref. Received by editors, 14 June 1971.

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USSR

UDC 621.396.577.861.5.001.24

ZAKHAR'YEV, L. N., LEMANSKIY, A. A., and TUMANSKAYA, A. Ye.

"Computing the Radiating System of a Two-Mirror Antenna"

Moscow, Antenny, No. 10, 1971, pp 48-60

Abstract: This article is concerned with the correctness of the method of geometric optics in computing and designing two-mirror antennas. It differs from other articles on this same subject in that it computes the field created by the counterreflector, which is an arbitrarily asymmetrical body, at the surface of the main antenna, a paraboloid of rotation. This computation is made on the condition that the counterreflector is in the Fresnel zone of the radiator while the mirror is in the Fresnel zone of the counterreflector. For ease of computation, it is assumed that the primary radiator has a circular opening in which the field distribution is symmetrical with linear polarization. The solution of the problem is in the form of relationships for the field distribution in the mirror aperture. It is shown that the use of geometric optics may lead to important errors in computing the parameters of this type of antenna. Methods of compensating for diffraction field distortions in the antenna aperture are discussed. The results of experiments conducted with the antenna are also examined.

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USSR

UDC: 621.396.677:535.231.16

ZAKHAR'YEV, L. N., LEMANSKIY, A. A., TUMANSKAYA, A. Ye.

"On Calculating the Radiating System of a Two-Reflector Antenna"

V sb. Antenny (Antennas—collection of works), vyp. 10, Moscow, "Svyaz", 1971, pp 48-60 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5B60)

Translation: Calculations carried out in the Kirchhoff approximation are used as a basis for evaluating the part played by diffraction effects and the influence of the short-range zone in the radiating system of a two-reflector antenna. A method is determined for compensating for field distortions in the reflector aperture by giving the counter-reflector the proper shape. Seven illustrations, bibliography of twelve titles. Resumé.

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- 16 -

Acc. Nr:

AP0045019

Abstracting Service: 5/70
INTERNAT. AEROSPACE ABST.

Ref. Code:
UR0109

A70-22407 " Problem of the diffraction of an electromagnetic wave on an array of plane waveguides (K zadache difraktsii elektromagnitnoi volny na reshetke ploskikh volnovudov). Iu. P. Vinichenko, L. N. Zakhar'ev, A. A. Lemanskii, and A. E. Tumanskii. *Radiotekhnika i Elektronika*, vol. 15, Jan. 1970, p. 58-66. 12 refs. in Russian.

Investigation of the characteristics of the field scattered by an infinite equidistant array of plane waveguides filled by a lossless homogeneous isotropic medium. The scattered field is determined by solving an infinite system of algebraic equations using the reduction method. For the case where there is only a specularly reflected beam, an estimate is given of the degree of approximation at which the truncated system of equations yields a practically accurate solution of the problem. The characteristics of the scattered field are analyzed, and attention is given to different methods of matching the waveguide array to free space.

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REEL/FRAME
19771915

172 051

UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--BURNER DESIGN AND ITS EFFECT ON THE FORMATION OF NITROGEN OXIDES IN
GAS TURBINE COMBUSTION CHAMBERS FIRED BY NATURAL GAS -U-
AUTHOR--(03)--TUMANOVSKIY, A.G., KHRISTICH, V.A., SHEVCHENKO, V.M.

COUNTRY OF INFO--USSR

SOURCE--TEPLCENERGETIKA 1970, 17(5), 35-8

DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENCR, PROPULSION AND FUELS

TOPIC TAGS--GAS TURBINE, COMBUSTION PRODUCT, NATURAL GAS, MASS TRANSFER,
MODEL, NITROGEN OXIDE, COMBUSTION CHAMBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3C04/1909

STEP NO--UR/C095/70/017/005/0035/0038

CIRC ACCESSION NO--AP0132171

UNCLASSIFIED

272 051

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132171
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONCEN. OF NO PLUS NO SUB2
 INEFFLUENT CASES FROM THE COMBUSTION OF NATURAL GAS IN GAS TURBINE
 COMBUSTION CHAMBERS (ONE FOURTH SCALE MODELS) WAS STUDIED AS A FUNCTION
 OF BURNER DESIGN (PREMIXED, DIFFUSIONAL, STREAM STABILIZED) AND
 LOCATION, EXCESS PRIMARY AIR (ALPHA SUB1) AND TOTAL AIR USED, CHAMBER
 PRESSURE, AND FLAME FRONT CHARACTERISTICS. EFFECTS OF EACH OF THE
 VARIABLES ARE DISCUSSES. THE LOWEST NO PLUS NO SUB2 CONCNS.
 WERE OBTAINED WITH A DIFFUSIONAL BURNER IN THE EXCESS PRIMARY AIR REGION
 ALPHA SUB1 EQUALS 1.8-2.0. LARGE AMPLITUDE PRESSURE PULSATIONS
 (VIBRATIONAL COMBUSTION) IN THE COMBUSTION CHAMBER REDUCED THE NO PLUS
 NO SUB2 CONCEN. IN THE EXHAUST GASES. THIS EFFECT IS RELATED TO IMPROVED
 MASS TRANSFER IN THE FLAME AND THE GENERAL LOWERING OF THE TEMP. LEVEL
 OF THE COMBUSTION VOL.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--HEATING OF CASTINGS IN A THERMAL FURNACE WITH A CAR TYPE BOTTOM -U-
AUTHOR--(05)-PARASYUK, P.F., SHERSTYUK, A.A., KORNIICHUK, A.I., TUNANSKIY,
B.F., BERKUN, M.N.
COUNTRY OF INFO--USSR
SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (2), 49-50
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--METAL CASTING, METAL HEATING, HIGH MANGANESE STEEL, CAST
STEEL, AUSTENITIC STEEL, METALLURGIC FURNACE/(U)110G13L HIGH MANGANESE
STEEL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1982/1288 STEP NO--UR/0129/70/000/002/0049/0050
CIRC ACCESSION NO--AP0106069
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0105069

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOR BETTER CONTROL OF HEATING IN A FURNACE WITH A CAR TYPE BOTTOM, THE THERMOCOUPLE SHOULD NOT BE PLACED IN THE ARCH OF THE FURNACE BECAUSE OF THE LARGE HEAT GRADIENT BETWEEN THE CASTING AND THE ARCH. IN THE STUDY OF HEATING A CASTING OF 110G13L FOR 17 HR, BECAUSE OF THIS LARGE HEAT DIFFERENCE, THE CASTING WAS NOT HEATED TO THE NECESSARY TEMP. AS A RESULT, INSTEAD OF PURE AUSTENITE, UNDISSOLVED CARBIDES REMAINED IN THE CASTING. THE AMT. OF SCALE FORMED ON 110G13L CASTINGS DEPENDS ON THEIR POSITION IN THE FURNACE; THE LESSER AMT. IN THE CENTER OF THE FURNACE, THE MOST AT THE END OWING TO LEAKS OF THE JOINT OF THE CAR TYPE BOTTOM AND THE LINING WALL. IN THW STUDY OF THE EFFECT OF COMPN. OF THE HEATING PRODUCTS FROM THE GAS ON SCALE FORMATION IN 110G13L DURING TEMPERING, ANAL. OF THE PRODUCTS SHOWED THAT WITH INCREASE IN EXCESS AIR, THE DEPTH OF THE SCALE AND DECARBURIZED LAYER ON THE SURFACE OF THE CASTINGS INCREASED. ARTHUR J. PEAT.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--NARROW BAND SPECTRAL PHONOCARDIOGRAPHY AND THE RESULTS OF FREQUENT
ANALYSIS OF SOUNDS AND MURMURS IN ATHEROSCLEROTIC CARDIOSCLEROSIS AND
AUTHOR--(03)-TUMANOVSKIY, M.N., SIROTA, A.D., ZENKEVICH, M.M.
COUNTRY OF INFO--USSR
SOURCE--KARDIOLOGIYA 10(1): 93-98. ILLUS. 1970
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--HEART DISEASE, PHONOCARDIOGRAPHY, DIAGNOSTIC MEDICINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0538 STEP NO--UR/0495/70/010/001/0093/0098
CIRC ACCESSION NO--AP0131161
UNCLASSIFIED

2/2 016

CIRC ACCESSION NO--AP0131161
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT. OBJECTIVE INDICES OF SPECTRAL
 CARDIAC SOUNDS AND MURMURS IN THE FORM OF RELATIVE VALUES, AMPLITUDE,
 DURATION AND PHASE OF THE MAXIMAL AMPLITUDE, WERE ELABORATED. THIS
 TECHNIQUE ENABLE DETERMINATION OF NORMAL VALUES OF HEART SOUNDS IN 80
 HEALTHY PERSONS. THE RELATIVE VALUES OF THESE INDICES IN 88 PATIENTS
 SUFFERING FROM CARDIAC DISEASES WERE STUDIED; THE RELATIVE DEVIATIONS IN
 THE SOUND SEMIOTICS IN MYOCARDIAL AND CARDIAC LESIONS WERE ESTABLISHED.
 THE SOUND ALTERNATION OF THE HEART AND VARIABILITY OF HEART SOUNDS AT
 HIGH FREQUENCY WERE ESTABLISHED. THIS TECHNIQUE IS RECOMMENDED FOR THE
 EXPRESS ANALYSIS IN MASS EXAMINATIONS OF PATIENTS AFFECTED WITH CARDIAC
 DISEASES.

FACILITY: VOROZNYH MED. INST., VORONEZH, USSR.

UNCLASSIFIED

USSR

Cardiovascular Diseases

UDC 616.12-073.43-073.96

TUMANOVSKIY, M. N.M PROVOTOROV, V. M., AND FILYAKIN, B. F., Department of Hospital Therapy, Voronezh Medical Institute, and Department of Rigid Body Physics, Voronezh Polytechnic Institute'

"A Method of Remote (Contactless) Phonocardiography and Its Clinical Significance"

Moscow, Kardiologiya, Vol 12, No 6, 1972, pp 84-89

Abstract: Contact between a phonocardiographic sensor and the body surface causes changes in signal characteristics. In addition, occasionally it is impossible to attain the firm contact necessary for reliable recordings. Therefore a concertter has been developed with which recordings can be made with the sensor 5-10 mm away from the body surface. The instrument was tested on healthy individuals and patients with cardiac illnesses. Recordings were compared with contact phonocardiograms. Among healthy individuals the components of I and II sounds were recorded distinctly by the remote method but were not always detected by the contact method. III and IV sounds were detected much more frequently by the remote method. Among patients with tonsillocardiac syndrome the III sound was recorded twice as often by the remote method, while the contact method altered the signals, probably due to

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USSR

TUMANOVSKIY, M. N., et al., Kardiologiya, Vol 12, No 6, 1972, pp 84-89

the damping effect of the sensor's contact with the body. Among patients suffering cardiac failure, mitral valve operation could be distinguished with the remote method and not with the contact method. The remote method was also employed diagnostically on patients with congenital heart diseases. For example, with its employment it was possible to distinguish between rheumatic stenosis of the aortic ostium and coarctation of the aortic isthmus, and not so with the contact method. Thus this remote method is superior to the contact method, particularly with respect to diagnosis.

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- 10 -

USSR

UDC 621.394.74

TUMANOVSKIY, YE.I., ABUGOV, A.G., GORODETSKIY, V.I., PODAKOV, A.S.

"Status And Prospects For Development Of Automatic Telegraph Switching Technics"

Sb. nauch. tr. Kiyev. fil. TsNII svyazi (Collection Of Works Of The Kiev Branch Of
The Central Scientific-Research Institute Of Communications), 1970, Issue 6, pp 10-
15 (from RZh--'Elektrosvyaz', No 6, June 1971, Abstract No 6.64.249)

Translation: The characteristics are presented of register stations for telegraph
exchange networks and direct connections. The principal operation-technical char-
acteristics and the principles of construction of the prospective electronic systems
of switching telegraph channels are considered. Summary.

1/1

Radiobiology

USSR

UDC 576.8.095.14:539.12

TUMANYAN, M. A., and PERSHINA, Z. G., Institute of Epidemiology and Microbiology imeni Gamaleya, USSR Academy of Medical Sciences, Moscow

"The Effects of Ionizing Radiation on Microorganisms and Radiation Sterilization (Survey)"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 5, May 71, pp 75-80

Abstract: In this review, the radiosensitivity of microorganisms is compared with that of animals and plants, a classification of microorganisms is presented according to their increasing resistance to X-rays gamma-, and beta-rays (bacteria, molds, yeasts, spores, viruses, and phages), mutations are described, and the causes of the unequal susceptibility of cells in one culture are discussed. With decreasing size of individual cells, increasing concentration of cells per ml of suspension, poor nutrition, abundant oxygen supply, and temperature above 40°C, the sensitivity of the microorganisms to ionizing irradiation increases. As for the stage of growth, sensitivity is greatest at the beginning of cell division. Due to its bactericidal effect, ionizing radiation is used for sterilization of food products and other objects whenever

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USSR

TUMANYAN, M. A., et al, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii,
No 5, May 71, pp 75-80

thermal and chemical methods are unsuitable (packaged products, for instance).
The main problems to be resolved in the area of radiation sterilization are:
selection of the most suitable source of rays; determination of effective doses;
investigation of the sterility and harmlessness of irradiated products; and
development of better sterilization methods and equipment for standard and
special production circumstances.

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Immunology

USSR

UDC 617-001.28-092.9-06:616.927-085.371-032:611.3

TUMANZAN, M. A. and NIKOLAYEVA, L. A. Institute of Epidemiology and Microbiology
Imeni Gamaleya, Academy of Medical Sciences USSR, Moscow

"Enteral Vaccination of Irradiated Mice with Heated Typhoid Vaccine"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Vol 47, No 6,
Jun 70, pp 28-31

Abstract: The effectiveness of enteral vaccination was studied when the organism was most susceptible to infection. Mice weighing 18-20 g were irradiated with gamma-rays in a dose of 517 r. A total of 40-50% of the animals died within 30 days of irradiation. Typhoid vaccine was injected into the animals on three successive days. Immunity was tested seven days after vaccination. It was found that the immunity of the animals which was reduced by irradiation was restored by vaccination. When the irradiation doses was greater, no such positive changes were observed. The effectiveness of enteral vaccination depends on the irradiation dose and the time period between irradiation and vaccination.

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1/2 020

UNCLASSIFIED

PROCESSING DATE--02OCT70

TITLE--MODIFICATION OF PROPERTIES OF STAPHYLOCOCCI AFTER REPEATED GAMMA IRRADIATION -U-

AUTHOR--(04)--TUMANYAN, M.A., PERSHINA, Z.G., PAVLOVA, I.B., SAMOYLENKO, I.I.

COUNTRY OF INFO--USSR

SOURCE--MIKROBIOLOGIYA 1970, VOL 39, NR 1, PP 112-117

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--STAPHYLOCOCCUS AUREUS, GAMMA RADIATION, DNA, RADIATION BIOLOGIC EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1990/1442

STEP NO--UR/0220/70/039/001/0112/0117

CIRC ACCESSION NO--AP0109502

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--02OCT70

GIRC ACCESSION NO--AP0109502

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REPEATED GAMMA IRRADIATION WITH SUBBACTERICIDAL DOSES OF STAPHYLOCOCCUS AUREUS RESULTED IN MODIFICATION OF ITS CULTURAL, BIOCHEMICAL AND OTHER PROPERTIES. ULTRA FINE CELL STRUCTURE CHANGED AND CELL RADIORESISTANCE INCREASED. A FALL IN ENZYME ACTIVITY, AN IMPAIRMENT OF HEMOLYTIC PROPERTIES AND A LOSS OF VIRULENCE CAUSED SAPROPHYTIZATION OF STAPHYLOCOCCI. A COMPARISON OF ULTRA FINE STRUCTURE IN THE PARENT STAPHYLOCOCCI AND IN THOSE WITH INCREASED RADIORESISTANCE REVEALED ENLARGED (2-2.5 FOLD) CELL DIMENSIONS IN THE IRRADIATED CULTURES, A DISTURBANCE OF CELL DIVISION AND A DISAPPEARANCE OF MEMBRANE STRUCTURES TYPICAL FOR THE PARENT CULTURE. DESPITE THE CONSIDERABLE CHANGES IN STAPHYLOCOCCI WITH INCREASED RADIORESISTANCE, THEIR DNA BASE RATIO WAS IDENTICAL TO THAT OF THE PARENT BACTERIA.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--THE USE OF HYDROLYZATE OF CHLORELLA PROTEIN FOR LABELING OF TYPHOID
BACILLI AND E. COLI WITH RADIOACTIVE CARBON --U--
AUTHOR--(02)--TUMANYAN, M.A., RADINSKI, K.A.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL MIKROBIOLOGII I EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 3,
PP 61-63
DATE PUBLISHED--70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--TYPHOID FEVER, CHLORELLA, PROTEIN, ESCHERICHIA COLI, CHEMICAL
LABELLING, CARBON ISOTOPE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/1463 STEP NO--UR/0016/70/000/003/0061/0063
CIRC ACCESSION NO--AP0109523
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0109523

ABSTRACT/EXTRACT--(U) GP-G- ABSTRACT. THE AUTHORS USED HYDROLYZATE OF CHLORELLA PROTEIN, CONTAINING A SET OF C PRIME14 LABELED AMINO ACIDS FOR LABELING S. TYPHI AND E. COLI. A METHOD OF GROWING AND OBTAINING LABELED BACTERIA WAS DESCRIBED. THE MINIMAL NUTRIENT MEDIUM WHICH CONSISTED OF A SET OF SALTS TO WHICH A PROTEIN HYDROLYZATE OF CHLORELLA WAS ADDED, PROVED TO BE THE BEST FOR OBTAINING CARBON LABELED BACTERIA.

UNCLASSIFIED

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USSR

UDC 576.851.25.2.095.11

TUMANYAN, M. A., PERSHINA, Z. G., PAVLOVA, I. B., and SAMOYLENKO, I. I., Institute of Epidemiology and Microbiology imeni N. F. Gama-leya, Academy of Medical Sciences USSR

"Modification of Properties of Staphylococci After Repeated Gamma-Irradiation"

Moscow, Mikrobiologiya, Vol 39, No 1, Jan/Feb 70, pp 112-117

Abstract: A study was made of the possibility of obtaining Staphylococci with increased radioresistance after repeated gamma-irradiation. Staphylococcus aureus strains 73 and V-445 were used. Experiments revealed that repeated gamma-irradiation of Staphylococcus aureus with sub-bactericidal doses resulted in modification of cultural, biochemical and other properties. Ultrazine cell structure changed and cell radioresistance increased. A drop in enzyme activity, an impairment of hemolytic properties, and a loss of virulence caused saprophytization of the Staphylococci. A comparison of ultrafine structure in the parent Staphylococci and strains with increased radioresistance revealed enlarged (2-2.5 fold) cell dimensions in the irradiated cultures, disruption of cell division, and the dis-

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USSR

TUMANYAN, M. A., et al., Moscow, Mikrobiologiya, Vol 39, No 1,
Jan/Feb 70, pp 112-117

appearance of membrane structures typical of the parent culture.
Despite the considerable changes in staphylococci with increased
radioresistance, their DNA base ratio was identical to that of the
initial strain.

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1/2 028

UNCLASSIFIED

PROCESSING DATE--27NOV70

TITLE--CONCERNING THE ENTERAL VACCINATION OF THE IRRADIATED MICE WITH
HEATED TYPHOID VACCINE -U-

AUTHOR--(02)-TUMANYAN, M.A., NIKOLAYEVA, L.A.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 6.
PP 28-31

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TYPHOID FEVER, VACCINATION, RADIATION BIOLOGIC EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3001/0403

STEP NO--UR/0016/70/000/006/0028/0031

CIRC ACCESSION NO--AP0126158

UNCLASSIFIED

2/2 028

CIRC ACCESSION NO--AP0126158

UNCLASSIFIED

PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. DATA PRESENTED IN THIS PAPER INDICATE THAT ENTERAL VACCINATION WITH TYPHOID VACCINE AFTER RADIATION INJURY OF THE ORGANISM PROMOTED RESTORATION OF REDUCED NATURAL RESISTANCE. THE EFFICACY OF ENTERAL VACCINATION DEPENDED ON THE IRRADIATION DOSE AND THE TIME INTERVAL BETWEEN THE IRRADIATION AND THE COMMENCEMENT OF VACCINATION. FACILITY: INSTITUT EPIDEMIOLOGII I MIKROBIOLOGII IM. GAMALEI AMN SSSR, MOSKVA.

UNCLASSIFIED

USSR

UDC 62.500.757

SARAFYAN, N. YE., and TUMANYAN, V. A., Institute of Experimental Biology,
Academy of Sciences Armenian SSR

"Modeling the Elements of the Functional Organization of the Nervous System"

Yerevan, Biologicheskii Zhurnal Armenii, Vol 25, No 12, 1972, pp 88-89

Abstract: The central nervous system consists of a number of sections located one above another according to increasing complexity of anatomical and functional organization. Each section controls the functions performed by lower sections and is designed to analyze and integrate afferent information necessary for formulating the program of action. A section consists of one nervous center and of neurons representing lower centers, and it is designed to analyze certain sensory information and to synthesize a certain reaction. A center consists of one sensory nucleus which can be excited by receptors and by the representative neurons, and it is designed to perform just one function. During the activity of any section, the nervous center and the neurons representing lower centers influence each other on the principle of coordination. The reaction elicited by a section is modified by the activity of a higher section on the principle of subordination. Each nervous center operates on the principle of the fastest restoration of equilibrium in response to internal and external stimuli.

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172 028

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--SYNTHETIC REGULAR POLYTRIPETIDES AND PROTEINS OF THE COLLAGEN

CLASS -U-

AUTHOR--(05)--ANDREYEVA, N.S., YESIPOVA, N.G., MILLIONOVA, M.I.,

ROGULENKOVA, V.A., TUMANYAN, V.G.

COUNTRY OF INFO--USSR

SOURCE--BIOFIZIKA 1970, 15(2), 198-205

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY

TOPIC TAGS--PEPTIDE, CHEMICAL SYNTHESIS, GLYCINE, AMINO ACID, COLLAGEN, X RAY ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3003/0918

STEP NO--UR/0127/70/015/002/0198/0205

CIRC ACCESSION NO--AP0129983

UNCLASSIFIED

*2/2 028

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0129983

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REGULAR SYNTHETIC POLYTRIPETIDES WITH GLYCINE IN THE 1ST AND AMINO OR IMINO ACIDS IN THE 2ND AND 3RD POSITION WERE STUDIED AS MODELS OF STRUCTURAL PECULIARITIES OF COLLAGEN PROTEINS. THE NECESSARY AND SUFFICIENT CONDITION FOR THE EXISTENCE OF COLLAGEN STRUCTURE IS THE OCCURRENCE OF GLYCINE IN THE 1ST AND OF AT LEAST ONE IMINO ACID IN THE 2ND OR 3RD POSITION IN THE TRIPLET. X RAY ANAL. OF CRYST. GLYCINE, IMINO ACID, AMINO ACID POLYMERS VERIFIED THE ROLE OF AGGREGATES OF THIS TYPE IN THE STRUCTURE OF COLLAGEN.
FACILITY: INST. MOL. BIOL., MOSCOW, U.S.S.R.

UNCLASSIFIED

USSR

UDC 669.2

SUMIN, S. N., and TUMAREV, A. S., Leningrad Polytechnic Institute imeni
M. I. Kalinin, Chair of General Metallurgy

"Oxidation Mechanism of Cobalt Alloys With Chromium"

Ordzhonikidze, Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya,
No 5, 1972, pp 34-41

Abstract: An experimental investigation by methods described earlier (Fizika Metallov i Metallovedeniye, Trudy Leningradskogo Politekhnicheskogo Instituta, 1970, No 305, p 92) was made of the potential oxidation mechanism of cobalt, chromium, and cobalt-chromium alloys (composition from 100% Co to 100% Cr. The oxidation rate of cobalt was found to be determined by the two-way diffusion of cobalt and oxygen. Cobalt alloys with small chromium additions oxidize at the expense of preferred diffusion of cobalt ions. The oxidation mechanism of these alloys includes the development of cobalt oxide and the internal chromium oxidation in the alloy. The oxidation process of alloys with high chromium additions also develops by means of diffusion of metal (chromium) and oxygen. The simultaneously originating oxide film consists of a spinel phase and chromium oxide, which later becomes the main component of the oxide layer. The oxidation of chromium is limited by the

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USSR

SUMIN, S. N., and TUMAREV, A. S., Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, No 5, 1972, pp 341-41

diffusion of oxygen. The CoCr_2O_4 spinel oxide appears as a protective oxide on Co-Cr alloys. Three figures, one table, two formulas, fifteen bibliographic references.

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- 72 -

USSR

UDC 621.396.677.(088.8)

BARANOVSKIY, Ye. I., TUMARKIN, E. F.

"Wide Band Linear Polarization Antenna"

USSR Author's Certificate No 233030, Filed 27 Oct 67, Published 26 Jan 70 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8B28 P)

Translation: The proposed wide band antenna for linear polarization consists in a set of radiating elements periodically varying with respect to size and arranged perpendicular to a two-wire feedline. In order to increase the directionality of the antenna, the radiating elements are executed in the form of loops in the shape of circles or rectangles and excited by halfwave dipoles arranged symmetrically with respect to their axis. The operating principle is investigated, and the structural peculiarities are described. There is one illustration.

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- 24 -

USSR

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UDC 621.396.677.4(088.8)

BARANOVSKIY, Ye. I., TUMARKIN, E. F.

"Circular Antenna Array"

USSR Author's Certificate No 2116041, Filed 13 Apr 66, Published 19 Jan 70
(from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8B59 P)

Translation: The proposed circular antenna array consists of log-periodic radiators installed perpendicular to the plane of the array and arranged in one or several concentric circles. In order to insure circular polarization of the radiation in a broad frequency range, the log-periodic radiators are turned one relative to the other at an angle equal to π divided by the number of radiators in the circle and shifted along the axes with respect to each other. There is one illustration.

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- 24 -

USSR

UDC 621.771.23.011

VYDRIN, V. N., ~~TUMARKIN, V. YA.~~, and AGEYEV, L. M., Chelyabinsk Polytechnical Institute

"Experimental Investigation of Contact Stress During Rolling of Thick Strips. Report 1"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Chernaya Metallurgiya, No 2, 1970, pp 75-78

Abstract: The article describes the results of investigations of contact stresses during rolling of thick strips carried out with the help of a roll torquemeter. Identical measuring devices are placed into both rolls. Characteristic curves of contact stresses are presented and analyzed. The shape of curves of adjacent stresses depends on the kinematics of metal flow in relation to the contact surface and is related to the dependence of mechanical properties of the cited metal on the degree and rate of deformation. The obtained curves of normal stresses substantiate and expound the current explanation concerning their dependence on parameters, which characterize the form of deformation area, and are in full agreement with the curves of friction forces.

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Acc. Nr:

AP0049764

Abstracting Service:
CHEMICAL ABST. 5-70

Ref. Code:

480455

101690s Treatment of polyamide synthetic leather with glycerol. Bublik, I. M.; Kul'chitskii, S. I.; Turte, L. S.; Shnirel'man, R. A.; Tumarkina, I. A. (USSR). *Kozh.-Obuv. Prom.* 1970, 12(1), 51-4 (Russ). Artificial leather is made by sarg. non-woven, stitched cloth with a polyamide soln. After hardening, the rigid semi-product is immersed in a glycerol (I) bath to soften it. An increase of I concn. of $\leq 40\%$ increased the amt. of I absorbed by leather. A further increase in I concn. is undesirable, since it remains on the surface. The bath temp. has no effect on the I absorption. The optimum conditions are 20° and 40% I concn.; the excess I is squeezed out by rollers. CPJR

REEL/FRAME
19801682

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1/2 024

UNCLASSIFIED

PROCESSING DATE--11SEP70

TITLE--COMPRESSION AND DISTRACTION IN RECONSTRUCTIVE SURGERY OF THE TUBERCULOUS COXITIS AND GONITIS SQUELAE -U-

AUTHOR--VERESHCHAGIN, A.P., KHMELEVSKAYA, S.L., YAKOVENKO, E.I., TUMAROVA, V.T., SADOVOY, M.YA.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 3, PP 56-60

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ORTHOPEDIC SURGERY, TUBERCULOSIS, BONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1986/0634

STEP NO--UR/0589/70/104/003/0056/0060

CIRC ACCESSION NO--AP0102620

UNCLASSIFIED

2/2 024

CIRC ACCESSION NO--AP0102620

UNCLASSIFIED

PROCESSING DATE--11SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE PAPER AN EXPERIENCE WITH THE USE OF THE APPARATUS COMPRESSION AND DISTRACTION IN SURGICAL TREATMENT OF TUBERCULOUS COXITIS AND GONITIS SEQUELAE IS DESCRIBED. WITHIN THE RECENT 5 YEARS 115 PATIENTS HAVE BEEN OPERATED UPON. THE PECULIARITIES OF TECHNIC OF CORRECTIVE OSTEOTOMY WITH ELONGATION OF THE FEMUR ARE REPORTED. MAXIMUM ELONGATION OF ONE OF SEGMENTS DID NOT EXCEED 8-10 CM. THE MOST FREQUENT COMPLICATIONS WERE AS FOLLOWS: SUPPURATION AND CUTTING THROUGH OF NEEDLES INSERTED VIA THE ALIFORM PROCESS OF THE ILIAC BONE (13), PARESIS OF THE FIBULAR NERVE (5), DELAYED CONSOLIDATION IN 3 PATIENTS.

UNCLASSIFIED

1/2 021
UNCLASSIFIED
TITLE--THERMODYNAMIC PROPERTIES OF A SILVER,CADMIUM,ANTIMONY,N SUBAG
DOUBLE BOND N SUBSB EQUALS 1:1, TERNARY SYSTEM -U-
AUTHOR--(02)-VECHER, R.A., TUMASH, A.S.
PROCESSING DATE--04DEC70
COUNTRY OF INFO--USSR
SOURCE--ZH. FIZ. KHIM. 1970, 44(4), 1097-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--SILVER, CADMIUM, ANTIMONY, ENTHALPY, ENTROPY, TERNARY ALLOY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3004/0899
CIRC ACCESSION NO--AP0131485
STEP NO--UR/0057/70/044/004/1097/1099
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--A0131485

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE EXCESS FUNCTIONS DELTAH
 PRIMEEX, DELTA S PRIMEEX, AND DELTA G PRIMEEX IN AG-CD-SB MELTS WERE DETD.
 AT 810DEGREE SK AND PLOTTED AGAINST N SUBCD (AT. CONC.N.) WHICH WAS VARIED
 FROM 0.08 TO 0.75. THE DELTA G PRIMEEX AND THE ACTIVITY OF CD IN THE
 MELTS SHOWED A NEG. DEVIATION FROM IDEAL BEHAVIOR WITH A MAX. IN THE
 REGION 0.2-0.6 N SUBCD. THIS IS ACCOUNTED FOR BY THE PRESENCE OF
 STRUCTURAL GROUPS OF THE TYPE CDSB.
 UNIV. IM. LENINA, MINSK, USSR. FACILITY: BELORUSS. GOS.

UNCLASSIFIED

USSR

TUMASHEV, G. G.

"Problem of Movement of a Section under the Free Surface of a Liquid"

Tr. Seminara po krayev. zadacham. Kazansk. un-t (Works of the Seminar on Boundary Problems. Kazan University), 1970, vyp. 7, pp 262-265 (from RZh-Mekhanika, No 11, Nov 70, Abstract No 11B619)

Translation: This article contains a discussion of the statement and solution of the two-dimensional linear problem with respect to determining the pressure distribution and lift of a thin section moving under the surface of a heavy liquid. The plane of the flow is mapped conformally onto a circular region. The solution of the integral equation with respect to the induced vertical velocity on the basis of the Gabdulkhayev method is presented in the form of a polynomial the coefficients of which are determined from the corresponding systems of algebraic equations. The general formulas are presented for calculating pressure distribution and lift.

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USSR

UDC: 621.438-253.5-226.001.6

BEKNEV, V. S., TUMASHEV, R. Z.

"Investigations of Working Wheels With Low-Aspect Blades Profiled by Cylindrical Templates With Regard to Losses Along the Radius"

Tr. Mosk. vyssh. tekhn. uch-shcha im. N. E. Baumana (Works of the Moscow Higher Technical Academy imeni N. E. Bauman), 1970, No 134, pp 75-79 (from RZh-Turbostroyeniye, No 8, Aug 70, Abstract No 8.49.104)

Translation: An investigation of stages with variable-aspect blade \bar{h}_{ww} and fixed \bar{h}_{gv} in which the blades are profiled with regard to end effects and designed by using corrected flat templates showed that the efficiency and thrust coefficient of the wheel and the stage are practically constant within the range $\bar{h}_{ww} = 1.4-0.75$, and that the separation boundary shifts by about 6% toward lower flow rates with a reduction in \bar{h}_{ww} from 1.4-0.75. Three illustrations, bibliography of two titles. E. S. B.

1/1

1/2 041
UNCLASSIFIED
TITLE--COMBUSTION IN A SINTERING LAYER -U- PROCESSING DATE--04DEC70
AUTHOR--(04)-BRATCHIKOV, S.G., GROSHEV, M.YA., KHUDROZNIKOV, I.P.,
TUMASHEV, V.I.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(4), 46-50
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, PROPULSION AND FUELS, MATERIALS
TOPIC TAGS--IRON ORE, SINTERING FURNACE, COMBUSTION KINETICS, CARBON,
CARBON DIOXIDE, GAS ANALYSIS, COMBUSTION TEMPERATURE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/0803
STEP NO--UR/0148/70/013/004/0046/0050
CIRC ACCESSION NO--AT0132901
UNCLASSIFIED

2/2 041

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0132901
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AMONG THE COMPLEX PROCESSES GOING ON DURING SINTERING OF AN IRON ORE BATCH, THE COMBUSTION OF C AND THE REDN. OF FE OXIDES ARE SIGNIFICANT. BOTH PROCESSES EXERT AN EFFECT ON THE COMPN. OF THE GAS PHASE. THE COMBUSTION OF FUEL IN THE LAYER BILD. BY INERT MATERIAL WAS INVESTIGATED 1ST. THE CHANGE IN THE GAS COMPN. IN THE O ZONE IS ANALOGOUS TO THE CHANGE IN THE GAS COMPN. DURING THE COMBUSTION OF THE FUEL IN A DENSE LAYER WITHOUT INERT MATERIALS BEING PRESENT. THE INTERACTION BETWEEN C AND THE GAS TERMINATES SOONER THAN THE REDN. REACTION OF CO SUB2 GAS DEVELOPS. THE COMBUSTION OF C IN THE LAYER OF A BATCH CONTG. FE OXIDES IS ACCOMPANIED BY OXIDN. REDN. REACTIONS, THE EFFECT OF WHICH ON THE COMPN. OF THE GAS AT VARIOUS C YIELDS IS KNOWN. AT LOW C CONSUMPTION, FAVORABLE CONDITIONS ARE CREATED FOR THE OXIDN. OF LOWER FE OXIDES OF THE BATCH, AS A RESULT OF WHICH A LOSS IN CO SUB2 CAN TAKE PLACE. IF FE₀ IS NOT PRESENT IN THE BATCH, THEN THE COMPN. OF THE GAS IS STABILIZED. DECREASING THE FUEL CONTENT IN THE BATCH RESULTS IN A DECREASE IN THE TOTAL SURFACE OF INTERACTION OF C AND O. THE START OF COMBUSTION DOES NOT ALWAYS COINCIDE WITH THE POINT OF ATTAINMENT OF THE TEMP. CORRESPONDING TO THE INFLAMMATION (LESS THAN OR EQUALS TO 3.0-3.3PERCENT) IN THE BATCH. AT HIGHER C CONTENTS (4.0-5.0PERCENT), THE COMBUSTION COMMENCES LATER. TO THE LOW C CONTENT CORRESPONDS A HIGHER CONTENT OF RESIDUAL O IN THE GAS. UNDER THESE CONDITIONS, THE COMBUSTION OF THE FUEL COMMENCES AT LOWER TEMPS. FACILITY: URAL. POLITEKH. INST., SVERDLOVSK, USSR.

UNCLASSIFIED

1/2 022
 UNCLASSIFIED
 TITLE--SATURATION WITH IRON OF THE BLOOD PLASMA TRANSFERRIN IN PATIENTS
 WITH SYPHILIS AND GONORRHEA -U- PROCESSING DATE--20NOV70
 AUTHGR--(03)-TUMASHEVA, N.I., BORISENKO, A.M., BORISENKO, B.A.
 COUNTRY OF INFO--USSR
 SOURCE--VESTNIK DERMATOLOGII I VENEROLOGII, 1970, NR 6, PP 53-55
 DATE PUBLISHED-----70
 SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
 TOPIC TAGS--BLOOD PLASMA, TRANSFERRIN, VENEREAL DISEASE, VITAMIN, COBALT
 COMPCUND, ASCORBIC ACID
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--3C05/1385
 CIRC ACCESSION NO--AP0133337
 STEP NO--UR/0206/70/000/006/0053/0055
 UNCLASSIFIED

272 022

CIRC ACCESSION NO--AP0133337
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT. SATURATION WITH IRON OF THE BLOOD
PLASMA TRANSFERRIN WAS DETERMINED ACCORDING TO G. A. BABENKO'S METHOD IN
EXAMINATION OF 113 PATIENTS WITH DIFFERENT MANIFESTATIONS OF SYPHILIS
AND 102 PATIENTS WITH GONORRHEA. MARKED CHANGES WERE FOUND IN CASES
WITH SEVERE AND PROLONGED COURSE OF THE PATHOLOGICAL PROCESS. IN SEVERE
CASES OF SYPHILIS HIGH INDICES OF SATURATION WITH IRON OF THE BLOOD
PLASMA TRANSFERRIN WERE OBSERVED, WHEREAS IN THE PATIENTS WITH GONORRHEA
THE OPPOSITE TENDENCY WAS FOUND. SEARCH FOR MEANS OF ELIMINATION OF
SUCH CHANGES IN THE PATIENTS UNDER STUDY WOULD FACILITATE RESTORATIVE
THERAPY. IN THIS CONNECTION, A FAVOURABLE EFFECT OF ASCORBIC ACID AND
VIATMIN B SUB12 AS NCN SPECIFIC THERAPY WAS NOTED.
VINNITSKIY MEDITSINSKIY INSTITUT IM. N. I. PIROGOVA.
FACILITY:

UNCLASSIFIED

USSR

UDC: 621.382.3:536.51.082

ONOPKO, V. V., TUMASHOV, V. D.

"Use of Type MP-105 Transistors for Precision Automatic Remote Temperature Measurement"

Tr. Kuybyshev. fil. Spets. konstrukt. byuro po avtomatiz. v neftepererabotke i petrokhimii (Works of the Kuybyshev Affiliate of the Special Design Office on Automation in Petroleum Refining and Petrochemistry), 1970, vyp. 1, pp 142-146; Sbornik statey Kuybyshevskogo filiala SKB ANN "Avtomatizatsiya protsessov neftepererabotki i neftekhimii (Collection of Articles of the Kuybyshev Affiliate of the Special Design Office on Automation in Petroleum Refining and Petrochemistry "Automation of Processes in Petroleum Refining and Petrochemistry"), issue 1, Kuybyshev, 1969, pp 142-146 (from PZh-Metrologiya i Izmeritel'naya Tekhnika, No 11, Nov 70, Abstract No 11.32.670)

Translation: The authors examine experimental data from a study of transistorized circuits for automatic remote temperature measurement with an absolute error of $\pm 0.1^{\circ}\text{C}$. On the basis of the results, a narrow-range temperature indicator is proposed which consists of a type MP-105 pickup transistor, a measurement attachment, and a type EPD secondary instrument. The operating characteristics of the instrument are given. Five illustrations, two tables, bibliography of two titles. Resumé.

1/1

USSR

UDC: 621.316.825.088

ONOPKO, V. V., TUMASHOV, V. D.

"On the Error due to Possible Pickup Instability in Temperature Measurement with the Type MMT-1 Thermistor"

Tr. Kuybyshev. fil. Spets. konstrukt. byuro po avtomatiz. v neftepererabotke i neftekhimii (Works of the Kuybyshev Affiliate of the Special Design Office on Automation in Petroleum Refining and Petrochemistry), 1970, vyp. 1, pp 161-162; Sbornik statey Kuybyshevskogo filiala SKB ANU "Avtomatizatsiya protsessov neftepererabotki i neftekhimii (Collection of Articles of the Kuybyshev Affiliate of the Special Design Office on Automation in Petroleum Refining and Petrochemistry "Automation of Processes in Petroleum Refining and Petrochemistry"), issue 1, Kuybyshev, 1969, pp 161-162 (from RZh-Metrologiya i Izmeritel'naya Tekhnika, No 11, Nov 70, Abstract No 11.32.667)

Translation: The paper analyzes the effect which possible instability of a type MMT-1 semiconductor thermistor has on error in temperature measurement. The results of temperature measurements with the type EMD alternating-current narrow-range indicator developed at the Kuybyshev Affiliate of the Special Design Office on Automation in Petroleum Refining and Petrochemistry are compared with the results of thermal aging of the thermistors. One illustration, two tables, bibliography of three titles. Resumé.

1/1

USSR

TUMASONIS, V. V.

"ALDA -- A Dialogue System of Equivalent Transforms of Expressions"

Vychisl. Mat. i Vychisl. Tekhn. [Computer Mathematics and Computer Technology -- Collection of Works], No 3, Khar'kov, 1972, pp 52-54 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V694, by the author).

Translation: A system is described which consists of a complex of programs written in LISP for the BESM-6, allowing equivalent transforms of expressions to be made in the dialogue mode on the instructions of the user. The transforms include grouping of similar terms, combination of powers, opening of brackets, separation of a common factor, reduction and partial calculation of the value of an expression. It is possible to perform predetermined sequences automatically.

1/1

Circuit Theory

USSR

UDC: 621.372.852.3

TUMASOV, V. R., PIKALOV, A. P.

"An Approximate Method of Calculating the Equivalent Circuit of Type S2-20 Resistors"

Elektron. tekhnika. Nauchno-tekhn. sb. Radiodetali (Electronic Technology. Scientific and Technical Collection. Radio Components), 1970, vyp. 2 (19), pp 83-88 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1B183)

Translation: The authors present the equivalent circuit of an S2-20 resistor in the form of a Π -shaped attenuator with discrete elements. The wave impedance of the line is calculated. Six illustrations, one table, bibliography of ten titles. Resumé.

USSR

UDC 612.822.3+612.84

KOGAN, A. V., TKACHENKO, N. N., TUMASOVA, N. K. and SEUL'GA, Ye. L.,
Scientific Research Institute of Neurocybernetics, Rostov-na-Don State
University

"On the Interconnection of Neuronal Background Activity in the Visual and
Somatosensory Cortical Areas"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlov, Vol 23,
Vyp 5, Sep/Oct 73, pp 1086-1087

Abstract: The correlation coefficients for the background impulse activity
of 159 pairs of cat neurons, one in the visual region and the other in the
somatosensory region, were analyzed. In 25 to 30% of the cases significant
(greater than 0.4) coefficients were found for a 5 sec recording interval.
However for a 1 min interval the coefficients were not statistically signif-
icant. A group of five cats with the somatosensory region partially isolated
from subcortical structures also showed significant coefficients for 5 sec
intervals. These results are said to suggest significant episodic correla-
tion and the importance of intracortical pathways. The 1 min results are
considered due to oscillation leveling.

1/1

1/2 052
UNCLASSIFIED
TITLE--POLARIZATION OF THE RADIATION FROM A GAS LASER -U- PROCESSING DATE--27NOV70
AUTHOR--(02)-SMIRNOV, V.S., TUMAYKIN, A.M.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
NR 6, PP 2023-2030
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--GAS LASER, PHOTON, ANISOTROPY, DEPOLARIZATION, LASER RADIATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/2227 STEP NO--UR/0056/70/058/006/2023/2030
CIRC ACCESSION NO--AP0125805
UNCLASSIFIED

2/2 052

CIRC ACCESSION NO--AP0125805

UNCLASSIFIED

PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN EXPRESSION OF THE
 DEPOLARIZATION COEFFICIENT FOR THE RADIATION FROM A GAS LASER IS
 OBTAINED AS A FUNCTION OF RADIATION ENERGY, CAVITY ANISOTROPY AND TYPE
 OF OPERATING TRANSITION. WHEN A CIRCULAR POLARIZATION REGIME IS
 CLASSICALLY STABLE, THE DEPOLARIZATION COEFFICIENT MAY BE OF THE ORDER
 OF UNITY; IN THIS CASE HOWEVER THE COHERENCE TIME IS EXPONENTIALLY
 LARGE. IF THE STEADY STATE WITH LINEAR POLARIZATION IS CLASSICALLY
 STABLE, THE DEGREE OF POLARIZATION VARIES BETWEEN 1 AND 1-MEAN VALUE OF
 N (MEAN VALUE OF N IS THE MEAN NUMBER OF PHOTONS) DEPENDING ON THE
 ANISOTROPY OF THE CAVITY. FACILITY: INSTITUT FIZIKI
 POLUPROVDNIKOV SIBIRSK. OTD. AN SSSR.

UNCLASSIFIED

USSR

UDC 620.193.5:546.623-31:546.45-31

BUDNIKOV, P. P., BELYAYEV, R. A., VOLODIN, P. L., RAKHALIN, N. A., FURAYEV, V. A., and TUMBAKOVA, M. I.

"The Corrosion of Aluminum and Beryllium Oxides in Gaseous Ammonia at 200-800°C"

Leningrad, Zhurnal Prikladnoy Khimii, Vol XLIV, No 1, Jan 71, pp 54-59

Abstract: Data on the corrosion resistance of fused samples of beryllium and aluminum oxides in gaseous ammonia are virtually absent in the literature.

This study deals with liquid synthetic ammonia, Grade 1, COST 6221-52, 99.94% pure, and 99.5% pure beryllium oxide with a specific surface of 4.5 m²/g. After processing, samples were placed in streams of ammonia gas at various temperatures and flow rates, for various periods (200-800°C; 7.5-12.8 m/sec; 3-10 hr). After each test the ammonia gas was checked for decomposition, which might occur at high temperatures.

Gravimetric, metallographic and electron-microscope studies of the surface, revealed no corrosion of either oxide in the 200-800°C range. An ammonia

1/2

USSR

BUDNIKOV, P. P., et al., Zhurnal Prikladnoy Khimii, Vol XLIV, No 1, Jan 71,
pp 54-59

gas flow of 10 m/sec had neither a corrosive nor an erosive effect in the
250-350°C range.

2/2

Inorganic Compounds

USSR

UDC: 541.49:546.195'873'776'

MOROSANOVA, S. A., ~~TUMIROVA, L. V.~~, LYALYULINA, L. A.

"Investigation of the Process of Ascorbic Acid Reduction of 12-Molybdoarsenate in the Presence of Trivalent Bismuth"

Moscow, Vestnik Moskovskogo Universiteta, Ser. II: Khimiya, Vol 13, No 2, Mar/Apr 72, pp 215-219

Abstract: The process of ascorbic acid reduction of 12-molybdoarsenate in the presence of trivalent bismuth was studied by photometric and kinetic methods. The SF-4 spectrophotometer was used for the photometric analysis, and the FEK-M photoelectric colorimeter was used for the kinetic studies. The spectrophotometric study consisted in measuring the optical density of the reaction mixture resulting from the addition of ascorbic acid to a solution of sodium arsenate, bismuth nitrate, sodium molybdate and sulfuric acid. The results of the study show that a mixed molybdenum-bismuth-arsenic compound is formed at the beginning of the reduction process with ratio $[As]:[Bi] = 1$. After passing through a number of molybdenum-bismuth-arsenic complexes, the reduction reaction yields 12-molybdoarsenate.

1/1

USSR

TUNAKOV, A. P., RZHAVIN, YU. A.

UDC: 621.438:621.753

"The Influence of Technological Tolerances on the Parameters of a Gas Turbine"

Tr. Kazan. Aviats. In-ta (Works of the Kazan' Aviation Institute), No 133, 1971, pp 82-89 (from Referativnyy Zhurnal. Turbostroyeniye, No 1, Jan 72, Abstract No 1.49.112)

Translation: A method is proposed, which makes it possible to establish a numerical relation between scattering of the basic parameters of a turbine stage and the size of the technological tolerances for the dimensions of the flow-through part of the turbine. The method is based upon a discrete mathematical model of the GT stage, which is designed with the conventional tolerances. The model is linearized with respect to all the variables, and a system of linear equations is compiled. As a result of the solution of the equation, a table of influence coefficients is obtained; after transformations, this model makes it possible to establish a relation between the scattering of the basic parameters and the size of the tolerances for the geometric dimensions of the turbine. An example of calculation on the basis of the proposed method is presented. Four tables. Five references.

1/1

USSR

UDC 621.438.001

TUNAKOV, A. P., and KORABEL'NIKOV, A. Z.

"Method of Calculation of Characteristics and Induction Coefficients of Gas Turbines"

Kazan', IVUZ Aviatsionnaya Tekhnika, No 4, 1971, pp 141-145

Abstract : The described method of calculation of characteristics of gas turbines, developed by the Kazan' Aviation Institute, is characterized by a considerable lower number of allowances than usually. By this method, characteristics of practically any gas turbine can be calculated: single-stage and multistage turbines, axial-flow turbines, peripheral and centrifugal turbines, turbines with and without branch pipes, and turbines with "locking" in any blade rim or in the jet nozzle. All main types of turbine losses are considered, including losses in nozzles with due regard for the effect of angles of attack and reduced speed value, leakage losses, disk losses, etc. The moment of origination of locking is determined with accounting for nozzle losses. The described method was programmed together with the calculation method of induction coefficients on the electronic digital computer "Ural-2". Three illustr., four formulas, six biblio. refs.

1/1

- 112 -

USSR

TUNAKOV, A. P., and PEREL'SHTEYN, YE. KH.

UDC 533.6:621.4

"Study of the Ideal Cycle of a Continuous-Action Gas Turbine with Stepwise Heat Removal (Cycle with Re-expansion)"

Tr. Kazan. aviats. in-ta (Transactions of the Kazan^a Aviation Institute), Vypusk (Issue) 114, pp 18-30 (from RZh-Mekhanika, No 12, Dec 70, Abstract No 12B483, by Yu. F. Ditaskin)

Translation: Results of a calculation study of the ideal cycle of a gas turbine with stepwise heat removal are presented. If the process of heat removal is isothermal, the specific work in the cycle can be increased. This is realized by stepwise heat removal, achieved as a the deep (glubokoye) re-expansion of the gas in the turbine, cooling in a cooler, followed by compression in the compressor to the ambient pressure, or by stepwise compression. A formula is derived for the thermal efficiency of the cycle, working with two stages of heat removal, i.e., with cooling of gas after re-expansion, and with gas compression in the compressor to the ambient pressure. Formulas are derived for the efficiency and specific internal work of the gas. Plots of thermal efficiency of the cycle and other factors

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USSR

TUNAKOV, A. P., and PEREL'SHTEYN, YE. KH., Tr. Kazan. aviats. in-ta, Vypusk (Issue) 114, pp 18-30 (from RZh-Medhanika, No 12, Dec 70, Abstract No 12B483), by Yu. F. Dityakin)

versus pressure rise are constructed by these formulas. It is concluded that change in the ordinary section of the cycle by introducing stepwise heat removal is useful. Employment of stepwise heat removal is shown not to lead to lower efficiency. Bibliography: 4 entries.

2/2

USSR

TUNDA, A. A.

UDC 519.1

"Certain Generalizations in the Theory of Fibonacci Numbers".

Tr. Khabarovsk. in-ta inzh. zh.-d. transp. (Transactions of the Khabarovsk Institute of Railroad Transport Engineering), No 42, 1970, pp 56-65 (from Referativnyy Zhurnal -- Matematika, No 6, June 71, Abstract No 6V311, by V. Nechayev)

Translation: Suppose $\alpha = \frac{1+\sqrt{5}}{2}$, $\beta = \frac{1-\sqrt{5}}{2}$, $\mu = \ln \alpha$, $\lambda = \frac{2}{\sqrt{5}}$.

$$F_n = \frac{\alpha^n - \beta^n}{\alpha - \beta} \quad (n=0,1,\dots)$$

$$F_n = \frac{\lambda e^{\mu n} - (-1)^n e^{-\mu n}}{2}$$

as well as other similar assertions are proven.

1/1

USSR

UDC: 621.762:669.018.25(088.8) (1)

MOLOKHOV, I. F., STRAKHOV, N. S., CHEPURKIN, Yu. N., KARINKIN, P. M., TUNEY, I. G.

"Method of Manufacture of Metal Ceramic Products"

USSR Author's Certificate Number 360151, Filed 24/02/71, Published 15/01/73
(Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8G440P, by S. Krivososova).

Translation: In order to increase the wear resistance (by 1.5-6 times) of hard alloy products, they are annealed after sintering in a medium of quartz sand at 800-900°, then normalized at 900-950°. The method has been tested under production conditions, provides for an increase in wear resistance of hard alloy tools working under conditions of vibration during cutting of channels and drilling of ZhSBK alloy.

1/1

- 40 -

USSR

UDC 620.193.01

SUKHOTIN, A. M., and TUNGUSOVA, L. I., State Institute of Applied Chemistry
"Passivity of Titanium and Electrochemical Properties of Ti_2O_3 "
Moscow, Zashchita Metallov, Vol 7, No 6, Nov-Dec 71, pp 654-659

Abstract: Results of an experimental investigation of the electrochemical properties of Ti_2O_3 oxide are presented. The beginning passivation of titanium in H_2O , in the vicinity of the potential $\varphi = -0.3$ v can be explained by the oxide film development of the metal. The diagram φ -pH for titanium in aqueous solutions, plotted for the principal reactions involved in the passivity of titanium at 25° and 95° , is analyzed. The dependence of the acidity of the solution on polarization is discussed by reference to polarization curves of titanium in $H_2SO_4 + Na_2SO_4$ at 95° . On the basis of the analysis of the φ -pH diagram, the existence of a critical value of pH (2.3 at 25° and 1.5 at 95°), above which the electrode activation is impossible, was predicted and confirmed experimentally. Three illustr., three tables, 18 biblio. refs.

1/1

USSR

UDC: 620.193.41

SUKHOTIN, A. M. and TUNGUSOVA, L. I., State Institute of Applied Chemistry

"The Passivity of Titanium and the Electrochemical Behavior of TiO_{1.99}"
Moscow, Zashchita Metallov, Vol 7, No 3, 1971, pp 259-263

Abstract: The authors use the potentiostatic method for studying the cathode reduction of the oxide phase of the TiO_{1.99} compound with a TiO₂ structure in 2N H₂SO₄ at 25 degrees. The results show that the cathode polarization of TiO_{1.99} in 2N H₂SO₄ results in the reduction of oxygen content in the surface layer of this oxide. Intense dissolution of the oxides of titanium occurs at $\varphi < -0.35v$. A comparison of the electrochemical behavior of Ti and TiO_{1.99} validates the assumption that maximal passivity of Ti is evoked by the formation of a passivating film on its surface. The composition of this film is close to that of TiO_{1.99}. It is shown experimentally that the following type of reaction can take place on the oxide electrode at $\varphi < -0.4v$:
 $TiO_{2hydr} + 6H^+ + 6e \rightleftharpoons TiH_2 + 2H_2O$, $\varphi_0 = -0.45v$. Original article: one table, two formulas, three figures, and 19 bibliographic entries.

USSR

UDC 532.517.3

KUZ'MIN, V. V., TUNICHENKOV, A. A., FAFURIN, A. V., Kazan'

"Turbulent Boundary Layer in the Initial Sector of a Pipe with Rough Walls"
Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 5, 1971, pp 109-116.

ABSTRACT: The development of the turbulent boundary layer in the initial sector of a pipe with rough walls is studied within the framework of boundary layer theory. It is demonstrated that consideration of roughness can be performed by introducing a function to the "standard" rule of friction, considering this factor. The experimental study was performed on an experimental pipe sector with natural roughness, the relative value of which is 10^{-3} . The range of Reynolds numbers was $5.1 \cdot 10^4 - 3.4 \cdot 10^5$.

1/1

1/2 013

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--SYSTEMS OF EXTREMAL CONTROL AT RANDOM DISTURBANCES, HANDBOOK -U-

AUTHOR--(02)-MANDROVSKIYSOKOLOV, B.YU., TUNIK, A.A.

COUNTRY OF INFO--USSR

SOURCE--SYSTEMS OF EXTREMAL CONTROL AT RANDOM DISTURBANCES.. HANDBOOK.
(SISTEMY EKSTEMY EKSTREMAL'NOGO UPRAVLENIYA PRI SLUCHAYNYKH

DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--EXTREME-AUTOMATIC CONTROL, RANDOM PROCESS, HANDBOOK, NONLINEAR SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3003/1257

STEP NO--UR/0000/70/000/000/0001/0171

CIRC ACCESSION NO--AM0130252

UNCLASSIFIED

2/2 013

CIRC ACCESSION NO--AM0130252 UNCLASSIFIED PROCESSING DATE--13NOV70
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. TABLE OF CONTENTS: PREFACE 3.
CHAPTER I INVESTIGATION OF
CONTINUOUS EXTREMAL SYSTEMS WHICH ARE UNDER THE EFFECT OF RANDOM
DISTURBANCES AND IMPEDIMENTS 27. II METHODS OF INVESTIGATION OF
IMPULSE EXTREMAL SYSTEMS WHICH ARE UNDER THE EFFECT OF STATISTICALLY
ASSIGNED SIGNALS, WITHOUT CONSIDERATION OF THE PROPERTIES OF THE OBJECT
OF CONTROL 48. III ANALYSIS OF RANDOM PROCESSES IN IMPULSE EXTREMAL
SYSTEMS WITH CONSIDERATION OF INERTIA AND NONLINEAR PROPERTIES OF THE
OBJECT OF CONTROL 79. IV METHODS TO INCREASE THE RESISTANCE TO
INTERFERENCE AND THE EFFECTIVENESS OF SYSTEMS OF EXTREMAL REGULATION
115. V INVESTIGATION OF MULTIDIMENSIONAL EXTREMAL SYSTEMS AT
STATISTICALLY ASSIGNED DISTURBANCES AND INTERFERENCES 135. APPENDICES
4 147. LITERATURE 167. THIS MANUAL GIVES A SYSTEMATIZED DESCRIPTION
OF A COMPLEX OF PROBLEMS, METHODS AND RESULTS OF INVESTIGATION OF
EXTREMAL SYSTEMS WHICH ARE UNDER THE EFFECT OF ASSIGNED DISTURBANCES AND
INTERFERENCES. THE BOOK IS DESIGNED FOR A WIDE RANGE OF SPECIALISTS IN
AUTOMATIC CONTROL.

UNCLASSIFIED

Public Health, Hygiene and Sanitation

USSR

UDC 614.484:615.285.7]:614.72

TUNIK, A. I., ANANOVSKIY, L. N., PRAVE, V. Ye., TIKHOTSKAYA, A. N.,
DERNITSYNA, Ye. A., and MINKINA, T. A., Moscow Municipal Disinfection
Station

"Hygienic Evaluation of the Air in Places Treated With Chlorophos"
Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 8, 1971,
pp 17-20

Abstract: Analysis of 250 air samples in a special experimental chamber and of air samples from well-ventilated places in cafes, hostels, hospitals, and restaurants showed that 3 hours after treatment with a 5% water solution of the organophosphorus insecticide chlorophos, the air contained no more than 0.5 mg/m³ of the compound (maximum permissible concentration). With very poor ventilation it took as long as 24 hours before the concentration of the insecticide dropped to the permissible level. The external temperature was an important factor. When the outdoor and indoor temperatures differed considerably and the windows were open, all traces of chlorophos disappeared within one hour of treatment.

1/1

USSR

TUNIN, M. S.

UDC: 534-8

"Molecular-Kinetic Mechanism of Sound Velocity Dispersion in Liquid Furan"

Moscow, V sb. Fiz. i fiz.-kimiya zhidkostey (The Physics and Physical Chemistry of Liquids--collection of works) No 1, 1972, pp 121-124, Moscow University (from RZh--Fizika, No 9, 1972, Abstract No 92h550)

Translation: The experimental data on the dispersion and absorption of ultrasound in liquid furan is explained by Knezerov relaxation. It is shown that this data fully corresponds to the simple relaxation system of thermal capacitance.

1/1

1/3 050

UNCLASSIFIED

TITLE--MECHANISM OF THE IGNITION AND QUENCHING OF
-U-
AUTHOR--(02)-RESHETINA, T.S., TUNITSKAYA, V.F.

PROCESSING DATE--23OCT70
ZNS-FE(CL) LUMINOPHORS

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(2), 295-300

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--LUMINESCENCE QUENCHING, ZINC SULFIDE, IR RADIATION, EXCITATION
ENERGY, RADIATION INTENSITY, ELECTRON TRAP, TEMPERATURE DEPENDENCE,
LUMINESCENCE SPECTRUM, ELECTRON TRANSITION, FERRIC CHLORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1989/1003

STEP NO--UR/0368/70/012/002/0295/0300

CIRC ACCESSION NO--AP0107522

UNCLASSIFIED

2/3 050

CIRC ACCESSION NO--AP0107522

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MECHANISM OF THE IR RADIATION INDUCED IGNITION AND QUENCHING OF LUMINESCENCE OF ZNS-FE(CL) PHOSPHORS WAS STUDIED TO VERIFY THE EARLIER CONCLUSION OF THE EXISTENCE OF "ACTIVE" LEVELS RESPONSIBLE FOR THE LUMINESCENCE "IGNITION" (E. YA. ARAPOVA, V. L. LEVSHIN, N. V. MITROFANOVA, T. S. RESHETINA, V. F. TUNITSKAYA, AND V. V. SHCHAENKO, 1966) AND TO OBTAIN NEW INFORMATION ON THE SENSITIVITY OF THE PHOSPHORS TO IR RADIATION AT 1.2-1.3 MU. THE INTENSITY OF THE LUMINESCENCE WAS STUDIED AS A FUNCTION OF TEMP. (77-250DEGREESK) AND THE ACTIVATOR (FE) CONC. ((0-5) TIMES 10 PRIME NEGATIVE6 G-G). THE DEPTH OF THE ELECTRON LEVELS WAS DETD. FROM THE TEMP. DEPENDENCE CURVES. THE AV. DEPTH OF ELECTRON TRAPS RESPONSIBLE FOR THE IR RADIATION INDUCED (AT 2.5 MU) LUMINESCENCE IGNITION IS 0.06 EV, AND THE TRAPS RESPONSIBLE FOR THE IR RADIATION INDUCED IGNITION AT SMALLER THAN OR EQUAL TO 1.5 MU ARE LOCATED 0.06 AND 0.25 EV FROM THE CONDUCTION BAND. DATA ON THE ACTIVATOR CONC. DEPENDENCE OF THE LUMINESCENCE IGNITION ON IR (GREATER THAN 2 MU) RADIATION REVEALED THAT THE ADDN. OF FECL SUB3 PROMOTED THE IGNITION AND AFFECTED THE COMPN. OF THE SHORT WAVELENGTH REGION OF THE IR RADIATION INDUCED LUMINESCENCE SPECTRUM. THE INTENSITY OF THE LUMINESCENCE INDUCED BY IR RADIATION AT SMALLER THAN 2 MU DECREASES WITH INCREASING CONC. OF THE ACTIVATOR.

UNCLASSIFIED

3/3 050

CIRC ACCESSION NO--AP0107522

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--THE STIMULATION OF THE LUMINESCENCE OF ZNS-FE(CU) PHOSPHORS BY IR RADIATION IS ATTRIBUTED TO THE TRANSITION OF ELECTRONS FROM THE TRAPS TO THE CONDUCTION BAND AND THE QUENCHING IS ATTRIBUTED TO THE TRANSITION OF HOLES FROM THE LUMINESCENCE CENTERS TO OTHER CENTERS (EMISSION OR QUENCHING) VIA THE VALENCE BAND.

UNCLASSIFIED

1/2 045

TITLE--THE SENSITIVITY OF SELF ACTIVATED ZNS SINGLE CRYSTALS TO THE I.R.
RADIATION -U-
AUTHOR--TUNITSKAYA, V.F.

UNCLASSIFIED
PROCESSING DATE--04DEC70

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKLAD. SPEKTROSK (USSR), VOL. 12, NO. 4, P. 722-5, APRIL 1970
DATE PUBLISHED----APR70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--IR RADIATION, ZINC SULFIDE, SINGLE CRYSTAL, CHLORINE, LUMINESCENCE, CRYSTAL DEFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1115

STEP NO--UR/0368/70/012/004/0722/0725

CIRC ACCESSION NO--AP0136535

UNCLASSIFIED

2/2 045

CIRC ACCESSION NO--AP0136535
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--04DEC70

ABSTRACT. THE WORK ESTABLISHED THE INFLUENCE OF I.R. RADIATION, AS WELL AS THE EFFECT OF CRYSTAL STOICHIOMETRY AND OF THE PRESENCE OF CL. THE LUMINESCENCE WAS MEASURED DURING AFTERFLOW BY COMPARING THE INTENSITY DURING I.R. IRRADIATION AND AFTER ITS CESSATION. QUENCHING WAS DETERMINED AT THE INSTANT OF EXCITATION. THE OBSERVATION CARRIED OUT AT 293DEGREESK WITH OTHER TESTS AT 77DEGREESK. THE RESULTS INDICATE THAT IT IS NOT NECESSARY TO INTRODUCE ACTIVATORS TO OBTAIN I.R. SENSITIVITY WHILE THE PEAKS OF THE LATTER ARE CONNECTED WITH DEFECTS OF THE BASE LATTICE AND WITH CL. IN ADDITION, VACANCIES OF ZN AND S PLAY AN IMPORTANT ROLE IN THE SIMULATION PROCESS. THEREFORE, BOTH ELECTRON AND HOLE LEVELS DETERMINE THE ENTIRE PROCESS.

UNCLASSIFIED

UDC 541.13

6.3R.

KONONENKO, L. YE., SHCHUROV, A. N., KOLOTYRKIN, V. M., TUNITSKIY, N. N.

"Electrical Conductivity of Ion-Exchange Membranes in Dry Form"

Moscow, Zhurnal Fizicheskoy Khimii, Vol XLVI, No 1, 1972, pp 242-243

Abstract: In order to determine the possible contribution of the electron conductivity to the total conductivity of polyelectrolyte membranes, a study was made of the F-23 membrane to which 11% sodium styrenesulfonate was grafted. The membrane had an exchange capacity of 0.5 milligram-equivalents/gram. The film was converted to various forms (H^+ , Ag^+ , Cu^{2+} , Fe^{3+}), and aluminum electrodes were deposited on it in a vacuum. After prolonged drying in a vacuum and simultaneous heating at $100^\circ C$, the electrical conductivities were measured for different temperatures (from 22 to $100^\circ C$) and field intensities (from 10^2 to 10^5 volts/cm). The volt-ampere characteristics were measured by a previously described procedure [L. S. Tuzov, et al., *Vysokomolekul. soyedineniya*, A, No 9, 2414, 1967]. Examples of the volt-ampere characteristics are presented for membranes in the H^+ -form and Ag^+ -form at various temperatures with a membrane thickness of 60μ . The data show that the ion-exchange materials in the dry state can be of interest as dielectrics in which without varying the matrix by a controlled procedure, the composition of the included ions varies. Introduction of ≈ 0.5 mg-equivalents/g of metal atoms or ions into the polymer dielectric

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USSR.

KONONENKO, L. YE., et al., Zhurnal Fizicheskoy Khimii, Vol XLVI, No 1, 1972, pp 242-243

has no strong effect on the conductivity of the dielectric. In dry form, the tested membranes have electron conductivity. The higher the ionization potential of the atom, the larger the activation energy of electrical conductance of the film in the corresponding form.

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1/2 028 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--MASS SPECTROMETRIC ANALYSIS OF HYDROGEN ISOTOPES WITH A HIGH
TEMPERATURE ION SOURCE -U-
AUTHOR--(03)-TUNITSKIY, N.N., KOMAROV, V.N., TIKHOMIROV, M.V.
COUNTRY OF INFO--USSR
SOURCE--PRIB. TEKH. EKSP. 1970, (2), 175-8
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--MASS SPECTROSCOPY, HYDROGEN ISOTOPE, ION SOURCE, HEATING, MASS
SPECTROMETER/(U)MI13015 MASS SPECTROMETER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1076

STEP NO--UR/0120/70/000/002/0175/0178

CIRC ACCESSION NO--AP0136496

UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136496

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ION SOURCE IS DESCRIBED WHICH IS BASED ON ION SOURCES OF MASS SPECTROMETERS OF THE MI-1301-5 TYPE. THE SOURCE IS CONVENIENT FOR WORK AT LESS THAN OR EQUAL TO 1000DEGREES. SIMULTANEOUS HEATING FOR 3 HR OF THE CHAMBER AT 800DEGREES AND THE ANALYZER AT 100DEGREES WITH BLOWING THROUGH THE DEVICE OF D (H) REMOVES THE INFLUENCE OF RESIDUAL EFFECTS OF THE ANAL. RESULTS OF PRACTICALLY PURE D. FACILITY: NAUCH.-ISSLED. FIZ.-KHIM. INST., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 541.183.12

TUMIRSEIT, N. M., KALININA, M. D., POPKOV, YU. M., NIKOLAYEV, N. I.,
Scientific Research Physico-Chemical Institute imeni L. Ya. Karpov,
Moscow, State Committee for Chemistry

"Ion-Exchange Kinetics on Ion-Exchange Resins in Solutions of
Medium Concentrations"

Moscow, Doklady Akademii Nauk SSSR, Vol 193, No 3, 21 Jul 70,
submitted 6 Jan 70, pp 649-652

Abstract: A simple equation is introduced for the mean desorption
time and experiments are described, on the basis of which the de-
pendence of the diffusion coefficients of ions in a cationic ion-
exchange resin on the concentration of the solution can be cal-
culated. The steady flow method was used for calculation of the
mean desorption time. The calculations were tested in an experi-
ment of self-diffusion of sodium and copper ions on a cation-
exchange resin of 0.6 mm particle diameter in the swollen state.
It was found that the self-diffusion coefficients of Na⁺ and Cu⁺
increase with increasing concentration of the surrounding solution.
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- 23 -

1/2 021 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--STABILITY OF THE DIELECTRIC PROPERTIES OF POLYMER FILMS FORMED IN A
GLOW DISCHARGE -U-
AUTHOR-(03)-TUZOV, L.S., KOLOTYRKIN, V.N., TUNITSKIY, N.N.
COUNTRY OF INFO--USSR
SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(4), 849-54
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS, PHYSICS
TOPIC TAGS--DIELECTRIC PROPERTY, PLASTIC FILM, ORGANISILICON COMPOUND,
GLOW DISCHARGE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1497 STEP NO--UR/0459/70/012/004/0849/0854
CIRC ACCESSION NO--AP0135158
UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0135158
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PRESENCE OF AR, O, N, OR H DURING THE FORMATION OF FILMS FROM (ME SUB3 S1) SUB2 O (I) VAPORS IN A GLOW DISCHARGE (L. S. TUZOV, ET AL., 1967) RETARDS FILM FORMATION DUE TO THE INCREASE OF I DECOMP. AND THE DECREASE OF I PARTIAL VAPOR PRESSURE. THE DIELEC. CONST. (EPSILON) AND TAN(DIELEC. LOSS ANGLE) TAN DELTA) OF I FILMS DECREASED DURING THE STORAGE AT ROOM TEMP. THE DECREASE WAS HIGHER AT HIGH AIR HUMIDITY AND FOR I FILMS CONTG. POLAR GROUPS. THE MOST STABLE EPSILON AND TAN DELTA WERE OBTAINED WITH THE FILMS FORMED IN THE PRESENCE OF H. THE ANNEALING ALSO INCREASED THE STABILITY OF EPSILON AND DELTA. PREPN. I FILMS AT HIGH GLOW DISCHARGE CURRENT D. DECREASED WT. LOSSES DURING HEATING LESS THAN OR EQUAL 600DEGREES IN THE AIR. FACILITY: FIZ.-KHM. INST. IM. KARPOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 512.25/.26+519.3:330.115

SEREBROVSKIY, A. N., TUNIYEV, A. D.

"Estimating the Number of Realizations of a Random Quantity as a Function of Accuracy of the Solution of a Stochastic Problem in Linear Programming"

V sb. Mat. metody issled. i optimizatsii sistem (Mathematical Methods of Studying and Optimizing Systems--collection of works), vyp. 5, Kiev, 1970, pp 40-47 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V625)

[No abstract]

USSR

BARYKIN, K., and TUNKEL, I., Special Ogonek Correspondents

"A Second Birth?"

Moscow, Ogonek, No 50, Dec 71, p 11

Translation: This is a severe disease. It attacks the newborn baby, the tiny defenseless person, and does not let go. "The treatment is ineffective," prominent physician note. Yes, up till now this disease could not be arrested. The first successful steps in the fight against it have been made only now in the department of the academician of the Academy of Medical Sciences USSR Yuriy Mikhaylovich Lopukhin...

The 5-year old Petya was brought to Professor Lopukhin's clinic from the Pediatric Neurological Department of the Second Moscow Medical Institute. The instability in the boy's walking began to progress rapidly from the age of 3½. He had barely learned to walk, but his relatives were not able to rejoice at his first steps. It seemed that only yesterday his grandmother said: "Look, look, he is walking!" But today the boy did not get up from his bed.

With every passing day his motor coordination became increasingly impaired and his slow speech became more slurred. This was terrible. A human being was just beginning to live, but even happy children's games were not accessible to him...

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